

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



14 JAN 2005



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/006846 A3

(51) International Patent Classification⁷: C07D 239/93,
239/94, 401/06, 401/12, 403/06, 403/12, A61K 31/517,
A61P 35/00

Charles, M. [US/US]; 201 Cornwall Street, #3, San
Francisco, CA 94118 (US).

(21) International Application Number:
PCT/US2003/021923

(74) Agents: GRIEDEL, Brian et al.; Exelixis, Inc., P.O. Box
511, 170 Harbor Way, South San Francisco, CA 94083-
0511 (US).

(22) International Filing Date: 14 July 2003 (14.07.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/396,269 15 July 2002 (15.07.2002) US
60/447,212 13 February 2003 (13.02.2003) US

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): EX-
ELIXIS, INC. [US/US]; P.O. Box 511, 170 Harbor Way,
South San Francisco, CA 94083-0511 (US).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
15 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/006846 A3

(54) Title: RECEPTOR-TYPE KINASE MODULATORS AND METHODS OF USE

(57) Abstract: The present invention provides compounds for modulating receptor kinase activity, particularly ephrin and EGFR, and methods of treating diseases mediated by receptor kinase activity utilizing the compounds and pharmaceutical compositions thereof. Diseases mediated by receptor kinase activity include, but are not limited to, diseases characterized in part by abnormal levels of cell proliferation (i.e. tumor growth), programmed cell death (apoptosis), cell migration and invasion and angiogenesis associated with tumor growth. Compounds of the invention include "spectrum selective" kinase modulators, compounds that inhibit, regulate and/or modulate signal transduction across subfamilies of receptor-type tyrosine kinases, including ephrin and EGFR.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/21923

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07D 239/93, 239/94, 401/06, 401/12, 403/06, 403/12; A61K 31/517; A61P 35/00
 US CL : 544/284, 287, 293; 514/259

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 544/284, 287, 293; 514/259

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 CAS ONLINE, EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,184,225 B1 (THOMAS et al) 06 February 2001 (06.02.2001), see entire document especially formula I on column 2 and note the definition of various variable groups. See examples 1-36 on column 27 through column 60.	1-11
X	US 5,962,458 A (LOHMAN et al) 05 October 1999 (05.10.1999), see entire document especially compound of formula I on column 2 and note the definition of various variable groups. See examples 1-97 for compounds made shown on column 27 through column 92.	1-11

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

17 November 2003 (17.11.2003)

Date of mailing of the international search report

02 JUN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Venkataraman Balasubramanian
 Telephone No. (703)308-1235

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/21923

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claim Nos.: 59-66 because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.